

DOCUMENT RESUME

ED 253 327

EA 017 782

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TITLE Estimating the Cost of Adequate K-12 Educational Expenditure in Selected Midwestern States: An Adjusted Miner/McMahon Approach.
INSTITUTION Illinois State Univ., Normal. Center for the Study of Educational Finance.
SPONS AGENCY Illinois School Problems Commission, Springfield.; Illinois State Univ., Normal. Graduate School.
PUB DATE Mar 85
NOTE 21p.
AVAILABLE FROM Publication Sales, Center for the Study of Educational Finance, 340-C DeGarmo Hall, Illinois State University, Normal, IL 61761 (\$1.00).
PUB TYPE Reports - Research/Technical (143)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Comparative Analysis; Educational Finance; Elementary Secondary Education; *Expenditure per Student; Expenditures; Mathematical Formulas; *Standards; *State Norms; Statistical Analysis
IDENTIFIERS Illinois; Indiana; Iowa; Michigan; Missouri; Wisconsin

ABSTRACT

According to a formula developed to measure the adequacy of state educational finance levels, only three of six selected midwestern states provided adequate levels of expenditure per pupil in 1981-82. The formula for determining adequacy, developed by Jerry Miner and Walter McMahon, consists of totaling adequate levels of expenditure in seven areas: instruction, plant operation and maintenance, fixed costs, administration, transportation, food, and other costs. The level of expense judged adequate in each area is calculated by multiplying the national average expenditure per pupil (designated as the standard of adequacy) by the percentage of national educational expenditures accounted for by the expense category in question, and adjusting the result on the basis of state cost of living indexes when personnel costs are involved. Of the states examined, Illinois, Wisconsin, and Michigan achieved financial adequacy while Iowa, Indiana, and Missouri did not. The methods used by Miner and McMahon to develop their formulas are described; limitations to the findings are discussed; and appendixes are provided identifying actual expenditure levels, levels of adequacy, cost of living variations, and public school enrollment in the 50 states. (PGD)

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ED 258327

ESTIMATING THE COST OF ADEQUATE K-12 EDUCATIONAL EXPENDITURE IN SELECTED MIDWESTERN STATES: AN ADJUSTED MINER/MCMANION APPROACH

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March 1965

Support for this study came from grants from the Illinois School Problems Commission and the Graduate School of Illinois State University. Matters of fact or opinion contained herein are solely the responsibility of the authors and in no way reflect the official policy of the funding agencies.

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Introduction

The school reform movement of the seventies and eighties has caused many educators to look at their own school programs along with many of the state superintendents' of education and ask if their educational systems and programs are "adequate" to meet the needs of the American youth. The National Commission on Excellence in Education, created by the United States Secretary of Education, Terrell H. Bell, brought educational reform to the public's attention with the commission's final report "A Nation At Risk" submitted April 26, 1983. The resulting scramble by educators and states across the nation to evaluate their present programs and strive to improve them created the need for comparisons to determine who was best, who was adequate, and who needed to upgrade programs for the education of our youth.

During the first week of January in 1984, Secretary of Education Terrell H. Bell released a report ranking the fifty states based on student performance by state and the basis of resources the states allocated to education.¹ Although Dr. Bell's press release on January 5, 1984, and subsequent press coverage of his comparisons centered on performance, this paper will more closely examine the financial comparisons done by the United States Office of Education and other pertinent researchers as it relates to selected midwestern states.

The need for comparisons between the states has also been recently addressed by the Council of Chief State School Officers. During the second week of November 1984, the Council of Chief State School Officers membership voted to support regular educational comparisons between the states which reversed all previous policy of this national organization. In the past the CCSS had always opposed such comparisons. The change was based on the belief that in order to maintain control of the situation or at least have input, they needed to support and become involved in national comparisons. They will accomplish this by a cooperative effort between the Council of Chief State School Officers and the United States Education Department. They are currently investigating a systematic approach for monitoring education and the publication of the results on an annual basis using a variety of criterion standards for the comparisons.²

The call for state-by-state comparisons is also coming from other groups other than educators. Political pressure is mounting at both the state and national levels.³ Politicians and other public officials feel that the nation needs this kind of information. According to Tennessee Governor Lamar Alexander, the cost of reform will not be born by the taxpayers unless they can see results.

Financial Adequacy Comparisons to Date

One of the obvious basis of comparisons was recently published in U.S. News and World Report.⁴ The total dollars spent by state was divided by state populations to determine a per capita cost of education by state (Appendix A). Alaska had the highest per capita cost of education at a figure of \$2,059 per person. Tennessee had the lowest at a per capita cost of \$518. The United States average was \$700. Although these statistics developed from information from the United States Census Bureau are interesting reading, they do not reflect such items as number of pupils served, costs per pupil, wealth/income factors, special needs of different educational populations, and cost of living variations on a state-by-state or regional basis.

Cost of living variations is one means of questioning the value of such school spending statistics and the need to qualify any state-by-state comparisons. The comments of the Council of Chief State School Officers are quite timely in their concern over inappropriate use of state-by-state comparisons. Utilizing the McMahon/Melton Cost of Living Index, Connecticut has the highest cost of living index at 127.8 and West Virginia has the lowest index of 90.6.⁵ Using U.S. News and World Report statistics based on Census Bureau figures, Connecticut has a per capita education cost of \$670 and West Virginia \$651, which are both well under the national average of \$700. These disparities in figures would cause the least astute student of statistics to question raw unqualified per capita expenditure comparisons on a state-by-state basis.

Additional educational finance comparisons of the fifty states can be found in the 1984 edition of The Condition of Education.⁶ The tables apropos of financial comparisons between the states includes "Current Expenditures Per Pupil in Average Daily Attendance in Public Elementary/Secondary Schools, by State: 1970-71 and 1981-82 (Table 1.14, p. 40) (Appendix B); Current Expenditures Per Pupil in Public Elementary/Secondary Schools (Chart 1.14, p. 41); Selected Fiscal and Demographic Features of the States, Indexed to National Average: 1971-72 and 1981-82 (Table 1.15, p. 42); and Per Pupil Expenditures and Per Capita Income Indexed to National Average, by State: 1981-82 (Chart 1.15, p. 43).

The United States Department of Education's statistics do not suggest any formula or overall basis for comparison and/or adequacy level between the fifty states. The direction of the Education Department at least started under Dr. Bell shows some indication that future publications of the Education Department might have actual comparisons in detail and possible suggestions of adequacy levels in the financial realm as well as the overall performance realm of education.

A Measure of Adequacy

Jerry Miner, a professor at Syracuse University, has researched the notion of adequacy in schooling in each state.⁷ By attempting to measure costs of instruction; plant operation and maintenance; transportation;

administration; food; attendance, health, and other; and fixed charges, he estimated expenditures per pupil in each of the fifty states. Adequacy was determined in his study by arriving at a national average per pupil expenditure which was defined as an adequate level of spending.

To determine the weighted average of each educational component, Miner utilized those percentages based on official United States government statistics on school spending published in 1976 (the last year the federal government compiled these statistics). Each category was divided as follows:

Instruction.....	61.2%
Plant Operation & Maintenance.....	11.2%
Fixed Charges.....	13.6%
Administration.....	4.9%
Transportation.....	4.4%
Food.....	3.6%
Attendance, Health & Other.....	1.1%

Each component was also further broken down by personnel expenditures and materials and supplies.

The basic strategy used was a determination for each category for each state of the required adjusted inputs necessary for each state to compare that with what was actually being expended. Adjusted inputs included such items as a poverty factor, special need factors, adequate instructional staff expenditure, utility costs, special transportation factors, and others. The strategy utilized was the totaling of the quantities of the inputs required to provide an adequate amount per pupil being equal to the United States average per pupil amount and thus the same for each state.

Instructional expenditures based on 1975-76 data was composed of instructional staff (77.2%); noninstructional staff (5.3%); and books, supplies, and other (17.5%). The national average expenditure for instruction in 1980 was \$1281 per pupil. Multiplying this amount with the previously mentioned percentages will provide the adequate expenditure per item. Adjustments to the 1980 adequacy level of \$1281 for instruction also included state-by-state percentage additional costs for pupils with special needs and pupils with poverty status.

Plant operation and maintenance, representing the second largest category of school expenditures, based on 1979-80 school year data, received the following proportions:

Salaries.....	41%
Fuel and Heat.....	14%
Electricity.....	19%
Supplies and Other.....	26%

Although a method of comparison was attempted, the difficulty in obtaining adequate expenditure levels due to variations in climate and other elements made it necessary to judge all present expenditures as adequate.

Administrative expenditures consists of salaries to superintendents, assistant superintendents, and their staff members which represents 70% of this classification of expenditures. The remaining costs (30%) are spent on materials, supplies, and other administrative inputs. Administrative expenditures were considered adequate with variations based on the number of school districts per state and any pertinent special factors a state might experience.

Transportation expenditures based on the last year data was available (1975-76) consisted of 60% salaries and 40% cost of using vehicles. Transportation, like plant operations and maintenance was judged adequate because of the difficulties in measuring needs based on variances between the states in school transportation rules and miles necessary to transport students (density of student population and miles from the school plants). Although Miner admitted difficulties with this item of school expenditures for transportation, he did make an attempt at adequate transportation factors by examining salary cost variation and special needs factors.

Food, attendance, health, and other expenditures were also examined. Food variations were measured by utilizing the United States average provision of free food to pupils from low income families. Attendance, health, and other were subdivided into 75% for salaries and 25% for combined services for attendance, health, and other. Salaries were determined as a percentage cost of instructional salaries. A poverty index and special needs factor were also utilized.

Fixed charges were determined to be adequate because of the wide diversity among the states in payment of such items as employee retirement, insurance, and any judgments against the local school districts. Fixed charges were determined to be adequate in the same ways as transportation, and plant operation and maintenance.

A summary of Miner's research findings are summarized in Appendix C. Ratios of estimated state adequate school expenditures for 1980 are listed by state.

Combining Miner and McMahon

Jerry Miner (Syracuse University) and Walter McMahon (University of Illinois) have done the research necessary to form the basis of this paper and proposed measures of adequacy. By extending and altering their research, it is possible to project adequacy in dollars and cents for the fifty states. In this paper, an adequacy formula is explored and applied to selected states in the midwest.

Measuring financial adequacy can be developed by both further research and utilization of parts of Miner's methodology. Instructional costs, administrative costs, transportation and plant operation and maintenance will be determined by state based on national averages adjusted by Miner's adequacy ratios and Melton's cost of living indexes

(Appendix C). Present expenditures by state in food service operation would be considered adequate. The 1976 data Miner utilized in each category would be used. Fixed charges (13.6%); and attendance, health, and other (1.1%) would be determined to be adequate at these percentages of state per pupil average expenditures. Adequacy would be based on adjusted expenditures per state with the national averages defined as the minimum level of adequacy (per pupil costs).

Instructional expenditures would be calculated with instructional staff expenditures based on a national average with state-by-state adjustments using McMahon's cost of living factors* (Appendix D). Miner's adjusting factors for special needs students and poverty status would also be used as adjusters.

Plant operations and maintenance expenditures would require additional research. State-by-state heating and cooling daily and seasonal averages need to be researched. State average costs for therms and kilowatts would then be used to determine adequate heating and cooling cost averages per year. Six month adjustments would be used to update twice per calendar year adequate expenditures to keep the formula updated and allow for those states which might have different fiscal years from calendar years. Regular increased costs of the utilities and heating would necessitate this regular adjustment. Personnel costs for plant operation and maintenance would reflect 41% of the 11.2% of state actual expenditures per pupil. For this paper, 11.2% of state-by-state average per pupil expenditures will be used multiplied times 59% to determine adequate nonpersonnel expenditures plus 41% of the national average expenditure as salaries adjusted by Melton's state-by-state cost of living index.

Transportation expenditures would have salaries, like plant operation and maintenance, at the national average adjusted by Melton's cost of living index. Vehicle costs, insurance, and any other miscellaneous expenditures would be deemed adequate and determined by 4.4% of state average per pupil expenditure to gain the average transportation expenditure times 40% to determine adequate non-salary expenditures. Transportation factors do not have a direct relationship to instruction and this would be deemed adequate with the aforementioned adjustments.

Administrative expenditures would be deemed adequate for salaries at national averages after factoring cost of living factors into the 70% determined to be salaries. The remaining 30% would be determined adequate at the national average.

Five midwestern states have been selected to be used as examples of the aforementioned adjusted Miner/McMahon adequacy formula. They will then be compared to actual United States average expenditures for the 1981-82 school year. If the total per pupil average expenditure totals more than or is equal to the United States average, the state will be determined to be adequate in elementary/secondary expenditures per student.

A breakdown of the United States average per pupil expenditure (the defined minimum adequacy level) is shown as follows in Chart I. Chart II shows the formula to measure each state's adequacy level. Chart III applies the formula to a sample of states in the midwest including Illinois, Indiana, Wisconsin, Missouri, and Michigan. This chart projects dollar amounts needed to reach adequacy levels in these five states. Adjustments for cost of living increases in 1983, 1984, and projected for 1985 are also included.

CHART I

UNITED STATES 1981-82 FINANCIAL ADEQUACY LEVEL

<u>\$2,724</u>		1981-82 United States Average Expenditure Per Pupil
\$1,667.09	(61.2%)	Instruction
305.09	(11.2%)	Plant Operation & Maintenance (41% salaries \$125.09; 59% non-salaries \$180.48)
370.46	(13.6%)	Fixed Costs
133.48	(4.9%)	Administration (70% salaries \$93.44; 30% other \$40.04)
119.86	(4.4%)	Transportation (60% salaries \$71.92; 40% vehicles \$47.94)
98.06	(3.6%)	Food
<u>29.96</u>	<u>(1.1%)</u>	Attendance, Health, and Other
\$2,724.00	100%	

CHART II

A FORMULA TO MEASURE STATE FINANCIAL ADEQUACY LEVELS BASED ON 1981-82 AVERAGE PER PUPIL EXPENDITURES

<u>Instruction:</u> National average x state Miner Ratio x Melton's state cost of living index.....	A
<u>Plant Operation and Maintenance:</u> State per pupil average expenditure x 11.2% x 59%..	B ₁
National average per pupil expenditure x 11.2% x 41% x state cost of living index.....	B ₂
<u>Fixed:</u> State Average per pupil expenditure x 13.6%.....	C
<u>Administration:</u> National average per pupil expenditure x 4.9% x 70% x state cost of living index.....	D ₁
National average per pupil expenditure x 4.9% x 30%.....	D ₂
<u>Transportation:</u> National average per pupil expenditure x 4.4% x 60% x state cost of living index.....	E ₁
State average per pupil expenditure x 4.4% x 40%.....	E ₂
<u>Food:</u> State average per pupil expenditure x 3.6%.....	F
<u>Attendance, Health & Other:</u> State average per pupil expenditure x 1.1%.....	G

[†]STATE FINANCIAL ADEQUACY LEVEL =

$$A + B_1 + B_2 + C + D_1 + D_2 + E_1 + E_2 + F + G$$

[†]A state expends an adequate amount on a per pupil basis when actual expenditures equal or exceed the adjusted expenditure level from the formula.

CHART III

FINANCIAL ADEQUACY LEVELS OF SELECTED STATES BASED ON 1981-82 AVERAGE PER PUPIL EXPENDITURES

STATE	ILLINOIS	IOWA	INDIANA	WISCONSIN	MISSOURI	MICHIGAN
Actual Exp./ Pupil	\$2936	\$2826	\$2306	\$2935	\$2342	\$3145
Adequate Exp./ Pupil	2,856.99	2,876.24	2,403.47	2,880.09	2,553.30	2,868.14
Adequate/ Inadequate	Adequate	Inadequate	Inadequate	Adequate	Inadequate	Adequate
Amount/ Pupil	79.01	(41.24)	(97.47)	54.91	(211.30)	276.86
No. Public School Students [†]	1,880,000	505,000	1,000,000	785,000	803,000	1,761,000
Total \$ Neces- sary to Reach Adequacy by State 81-82	—	20,826,200	97,470,000	—	169,673,900	—
Adjusted Exp. Needed to Reach Ade- quacy 1985 ^{††}	—	23,246,244	108,796,200	—	189,390,332	—

[†]Elementary and Secondary Public School Enrollment Fall 1982 (see Appendix E).

^{††}1983 Cost of Living Index 3.2%, 1984—4.3%, 1985 estimate 3.7% (see Footnote 9).

Limitations

Each of the fifty states are unique in some way. The greatly diverse populations both within and between the fifty states makes it extremely difficult to make adequacy determinations. The diverse population of the United States in social status, culture, and expectations for their educational systems make adequacy determinations nearly impossible.

Methodology in comparisons of state averages is also limited. Many states have great variations in cost of living, climate (heating and cooling expenses) and construction costs (as an example, some schools must be earthquake proof at an increase in costs of construction, inspection, and maintenance). Great variations within states add to the complexity of actual state-by-state comparisons.

Statistics used by Miner, which were based on 1975-76 information, must also be questioned. A validity study to determine the accuracy of these figures needs to be completed. The reform movement and subsequent changes in school finances in some of the states could make this information totally invalid. Also, the percentages of per pupil expenses based on middle 1970's statistics could have had significant changes with inflation and spiralling utility bills across the country. Updating this information and additional studies could equal or exceed the cost and work needed to do an adequate adequacy study based on finances.

Summary

The need for adequacy studies on finance can best be summarized by quoting Henry Barnard, the first Commissioner of Education, in 1880:

*Why do we seek to know the condition of education?
In the answer to this question will be found the
reasons for the elaborate statistical record which
forms a feature of all official school reports.
We take an account of education that we may know
whether it is sufficient in amount and good in
quality.*

The excellence movement of the 1980's, brought to the limelight by the "Nation At Risk" report, has caused educators and the public to question, as Henry Barnard did, the present condition of education. The change in philosophy and policy of the Council of Chief State School Officers to encourage comparisons and the present direction of the Education Department to do likewise is a start in fulfilling Henry Barnard's statement.

Henry Barnard divided the need to measure sufficiency into both quantity and quality. The adequacy issue was approached in this paper as a basis of finances. The limitations of adequacy as a sole function of finances and the difficulty in defining adequacy by the general tax paying public are quite apparent. Adequacy is only one imperfect part of the whole picture of educational performance in the United States.

Learning expectations, outcomes—both quality and quantity—and costs must all be considered when comparing elementary/secondary education.

A measure of adequacy on a national basis and between the states is one way to look at the wholistic picture. However, this approach does not deal with individual regions or individual school districts within a state. As an example, to increase all of the fifty-seven regions within Illinois to the adequacy level as defined in this paper, it would cost approximately \$215,740,000.¹⁰ To increase each of the individual school districts within the regions to the adequacy level would cost much more.

Increasing the money available in each state to bring each district or even each individual school to the state's adequacy level would not solve the entire adequacy problem. An additional issue would be the need for exacting decisions on how school state officials would distribute that money. If all of these new funds, which appear to be needed for adequacy, were to be spent outside the general grant-in-aid formulas, then each of the six states could be set back even further from equity goals than has already been shown to be the case.¹¹ We agree completely with Odgen and Van Dougherty that: "Whether initiatives funded outside the formula enhance or weaken equity remains an issue that every state should address."¹² For example, as this was being written, legislative proposals were being advanced in the Illinois General Assembly that might well move the state more toward adequacy, but push the state further away from equity.¹³ Much has been written about trying to reconcile these two monumental goals in educational finance.¹⁴ The harassed state official who tries to do it is apt to feel like a third-century Roman Emperor who can't decide where to direct his weakening resources—to the west against the Goths or to the east against the Persians. Whatever he does will not satisfy the Praetorian Guard at home.

This paper would doubtless be used by those who feel that Illinois does not need to spend more on public education since the state average is "adequate" by the procedures used in the study. To that policy position there are at least two possible replies. First, averages often mislead. Consider the scout who told his cavalry commander he could safely cross a river since the average depth was only four feet. He neglected to point out that it also contained numerous holes of at least ten feet in depth. The scout was probably shot, and so should we be if this particular paper is used to argue that all districts are spending at an "adequate" level. They are not, and it would take anywhere from 300 to 500 million dollars to bring them all to adequacy depending on which approach to adequacy is taken. The second reply is that this approach stands in considerable contrast to the RCM approach. This approach is based on what is currently spent and not on what ought to be spent. If the State of Illinois is truly concerned with "excellence," then something more than "minimum adequate" is needed. Still, it is perhaps reassuring to know that on "minimum adequate" grounds Illinois is not quite in as bad a shape as it is on "equity" grounds, at least using the approach to adequacy outlined in this paper. One final qualification is needed. There is far more experience and literature on the measurement of "equity" than there is on the measurement of "adequacy." If this paper stimulates more measurement attempts in the "adequacy" area, it will have served a useful purpose.

NOTES

¹"Education Department Issues Study Ranking States on Education," Education Week 3(16), January 11, 1984, pp. 1, 13.

²"State Education Chiefs Endorse Education Rankings," State Education Review 2(10) (November 1984):1, 2 (published by the Education Commission of the States).

³Chris Pipho, "Getting Schools on the Scoreboard," Kappan 66(4) (December 1984):237.

⁴"School Spending State by State," U.S. News and World Report 97 (26):10.

⁵Walter H. McMahon and Carroll Melton, "Measuring Cost of Living Variation," Industrial Relations 17(3) (October 1978):324-332.

⁶National Center for Educational Statistics, The Condition of Education, 1984 Ed. (Washington, D.C.: U.S. Department of Education, 1984).

⁷Jerry Miner, "Estimates of Adequate School Spending by State Based on National Average Service Levels," Journal of Education Finance 8 (Winter 1983):316-342.

⁸McMahon and Melton, p. 331.

⁹"For Consumers, Modest Price Hikes Ahead," U.S. News and World Report 98(2), January 21, 1984, pp. 53-55.

¹⁰Each of the 57 regions in Illinois were examined utilizing the publication Illinois Public Schools Financial Statistics 1981-82 School Year, issued by the Illinois State Board of Education, Department of Finance and Reimbursements. All of the high school, elementary, and unit districts were compiled with ADA and expenditure per pupil and then listed by region. The \$315,740,000 figure was developed by totaling the regional averages for each of the three types of districts which had expenditures per pupil under the \$2,076.99 adequacy level as defined in this paper. The dollars under the adequacy amount were then multiplied by the number of students. Cost of living increases were then applied to the 1981-82 figures as utilized in Chart III.

¹¹G. A. Hickrod, R. B. Chaudhari, and B. C. Hubbard, Decline and Fall of School Finance Reform in Illinois (Normal, IL: Center for the Study of Educational Finance, Illinois State University, 1983).

¹²Allan Odden and Van Dougherty, Education Finance in the States: 1984 (Denver, CO: Education Commission of the States, 1984), p. 22.

¹³Correspondence of G. Alan Hickrod with Honorable Arthur Berman and Honorable Gene Hoffman and Dr. Michael Bakalis.

¹⁴Walter W. McMahon and Terry G. Geske, Financing Education (Champaign, IL: University of Illinois Press, 1982).

APPENDICES

APPENDIX A

SCHOOL SPENDING STATE BY STATE

Nearly 29 cents of every dollar spent by state and local governments last year went to education. According to new Census Bureau figures, public-education costs rose 6 percent to a total of 163.9 billion dollars. Proportionately, however, education costs continued a gradual five-year decline. In 1978, education's share was 32 cents of every tax dollar. In 1983, grade schools and high schools received 112.9 billion, colleges and universities 43.8 billion, and other programs 7.2 billion.

	TOTAL SPENT	PER CAPITA		TOTAL SPENT	PER CAPITA
Alaska	\$1.0 bil.	\$2,059	Hawaii	\$0.7 bil.	\$694
Wyoming	0.7 bil.	1,356	Dist. of Columbia	0.4 bil.	685
New Mexico	1.3 bil.	907	Louisiana	3.0 bil.	685
North Dakota	0.6 bil.	862	Virginia	3.7 bil.	675
Delaware	0.5 bil.	858	Connecticut	2.1 bil.	670
Montana	0.7 bil.	857	Ohio	7.1 bil.	664
Oregon	2.2 bil.	843	Indiana	3.6 bil.	656
Utah	1.4 bil.	839	Illinois	7.5 bil.	655
New York	14.6 bil.	827	West Virginia	1.3 bil.	651
Colorado	2.6 bil.	824	Alabama	2.6 bil.	648
Wisconsin	3.8 bil.	818	Nevada	0.6 bil.	640
Minnesota	3.4 bil.	811	South Dakota	0.4 bil.	637
Michigan	7.2 bil.	795	North Carolina	3.8 bil.	622
Iowa	2.3 bil.	791	Maine	0.7 bil.	609
Arizona	2.3 bil.	788	Massachusetts	3.5 bil.	607
Vermont	0.4 bil.	787	South Carolina	2.0 bil.	605
Washington	3.3 bil.	772	Idaho	0.6 bil.	598
Maryland	3.3 bil.	766	Pennsylvania	7.0 bil.	592
Nebraska	1.2 bil.	756	New Hampshire	0.6 bil.	585
Texas	11.8 bil.	753	Georgia	3.3 bil.	580
Oklahoma	2.5 bil.	749	Kentucky	2.2 bil.	579
Kansas	1.8 bil.	746	Florida	6.0 bil.	565
California	18.2 bil.	724	Mississippi	1.4 bil.	552
Rhode Island	0.7 bil.	718	Missouri	2.7 bil.	545
New Jersey	5.3 bil.	716	Arkansas	1.3 bil.	543
U.S.	163.9 bil.	700	Tennessee	2.4 bil.	518

SOURCE: U.S. News & World Report, Dec. 24, 1984.

APPENDIX B

CURRENT EXPENDITURES PER PUPIL IN AVERAGE DAILY ATTENDANCE IN PUBLIC ELEMENTARY/SECONDARY SCHOOLS, BY STATE: 1970-71 AND 1981-82

STATE	CURRENT EXPENDI- TURES PER PUPIL IN 1981-82	CURRENT EXPENDITURES PER PUPIL IN 1970-71		PERCENT INCREASE IN CURRENT EXPENDITURES PER PUPIL FROM 1970-71	
		CURRENT (1970-71) DOLLARS	CONSTANT (1981-82) DOLLARS ++	CURRENT (1970-71) DOLLARS	CONSTANT (1981-82) DOLLARS ++
United States.....	\$2,724	\$911	\$2,031	199.0	34.1
Alabama.....	2,063	605	1,349	241.0	52.9
Alaska.....	6,429	1,507	3,359	326.6	91.4
Arizona.....	2,462	783	1,745	214.4	41.1
Arkansas.....	1,841	600	1,337	206.8	37.7
California.....	2,671	906	2,019	194.8	32.3
Colorado.....	2,914	841	1,875	246.5	55.4
Connecticut.....	3,189	1,056	2,354	202.0	35.5
Delaware.....	3,198	1,047	2,334	205.4	37.0
District of Columbia...	3,792	1,178	2,626	221.9	44.4
Florida.....	2,528	829	1,848	204.9	36.8
Georgia.....	1,862	714	1,592	160.8	17.0
Hawaii.....	2,862	1,023	2,280	179.8	25.5
Idaho.....	1,996	650	1,449	207.1	37.8
Illinois.....	2,936	1,036	2,309	183.4	27.2
Indiana.....	2,306	809	1,803	185.0	27.9
Iowa.....	2,826	901	2,008	213.7	40.7
Kansas.....	2,815	823	1,834	242.1	53.5
Kentucky.....	1,857	670	1,493	177.2	24.4
Louisiana.....	2,829	791	1,763	257.6	60.5
Maine.....	2,205	751	1,674	193.6	31.7
Maryland.....	3,235	1,039	2,316	211.4	39.7
Massachusetts.....	3,137	927	2,066	238.4	51.8
Michigan.....	3,145	1,007	2,245	212.3	40.1
Minnesota.....	2,905	1,049	2,338	176.9	24.3
Mississippi.....	1,706	602	1,342	183.4	27.1
Missouri.....	2,342	763	1,701	206.9	37.7
Montana.....	2,998	840	1,872	256.9	60.1
Nebraska.....	2,704	865	1,928	212.6	40.2
Nevada.....	2,424	820	1,828	195.6	32.6
New Hampshire.....	2,502	801	1,785	212.4	40.2
New Jersey.....	3,515	1,177	2,624	198.6	34.0
New Mexico.....	2,703	746	1,663	262.3	62.5
New York.....	4,280	1,567	3,493	173.1	22.5
North Carolina.....	2,099	685	1,529	206.0	37.3
North Dakota.....	2,729	742	1,654	267.8	65.0
Ohio.....	2,492	798	1,779	212.3	40.1
Oklahoma.....	2,667	676	1,507	294.5	77.0
Oregon.....	3,299	1,012	2,256	226.0	46.2
Pennsylvania.....	3,050	952	2,122	220.4	43.7
Rhode Island.....	3,040	1,002	2,233	203.4	36.1
South Carolina.....	1,876	659	1,469	184.7	27.7
South Dakota.....	2,300	776	1,730	196.4	32.9
Tennessee.....	1,89	623	1,389	204.2	36.4
Texas.....	2,229	703	1,567	217.1	42.2
Utah.....	1,931	701	1,567	175.5	23.5

APPENDIX B, continued

Vermont.....	2,763	854	1,904	223.5	45.1
Virginia.....	2,397	792	1,765	202.7	35.8
Washington.....	2,650	928	2,069	185.6	28.1
West Virginia.....	2,593	726	1,618	257.2	60.3
Wisconsin.....	2,935	984	2,193	198.3	33.8
Wyoming.....	3,417	931	2,075	267.0	64.7

† Includes expenditures for day schools only; excludes adult education, community colleges, and community services.

†† Adjusted for inflation using the Index of State and Local Governments Purchases.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Expenditures and Revenues for Public Elementary and Secondary Education: 1970-71, 1973, and Common Core of Data, unpublished tabulations (February, 1984) (Table 1.14).

APPENDIX C

RATIOS OF ESTIMATED STATE ADEQUATE SCHOOL EXPENDITURES,[†] 1980

RATIO OF ADEQUATE EXPENDI- TURES TO ESTIMATED U.S. ADE- QUATE LEVEL		RATIO OF ADEQUATE EXPENDI- TURES TO ACTUAL EXPENDI- TURES		RATIO OF ADEQUATE EXPENDI- TURES TO ESTIMATED U.S. ADE- QUATE LEVEL		RATIO OF ADEQUATE EXPENDI- TURES TO ACTUAL EXPENDI- TURES	
Alabama	.81	.87		Nebraska	.83	1.14	
Alaska	1.50	1.19		Nevada	.98	.91	
Arizona	.95	.92		New Hampshire	.80	1.01	
Arkansas	.80	.85		New Jersey	1.01	1.30	
California	1.08	.98		New Mexico	.94	.93	
Colorado	.98	1.07		New York	1.36	1.02	
Connecticut	.90	1.12		North Carolina	.83	.92	
Delaware	1.13	1.07		North Dakota	.96	.95	
Florida	.88	.97		Ohio	.90	.98	
Georgia	.87	.80		Oklahoma	.88	.96	
Hawaii	1.04	.94		Oregon	1.03	1.09	
Idaho	.84	.86		Pennsylvania	1.10	.98	
Illinois	1.11	.94		Rhode Island	1.07	1.03	
Indiana	.93	.85		South Carolina	.80	.93	
Iowa	.96	1.05		South Dakota	.77	1.08	
Kansas	.89	1.03		Tennessee	.84	.84	
Kentucky	.87	.84		Texas	.93	.98	
Louisiana	.82	.93		Utah	.87	.83	
Maine	1.02	.78		Vermont	.90	1.00	
Maryland	.96	1.11		Virginia	.91	.94	
Massachusetts	1.01	1.17		Washington	1.08	1.03	
Michigan	1.24	.91		West Virginia	.84	.97	
Minnesota	1.05	1.02		Wisconsin	1.05	.99	
Mississippi	.73	1.00		Wyoming	.98	1.13	
Missouri	.86	.93					
Montana	.98	1.07					

[†] Adequate expenditures include an allowance for unserved pupils with special needs.

SOURCE: Journal of Education Finance, Vol. 8, Table 12, p. 340.

APPENDIX D

DIFFERENCES IN THE COST OF LIVING AMONG STATES

STATE ^a	INDEX	STATE	INDEX
Alabama.....	92.6	Nebraska.....	101.3
Arkansas.....	90.9	Nevada.....	113.6
Arizona.....	105.4	New Hampshire.....	113.3
California.....	114.6	New Jersey.....	124.0
Colorado.....	106.9	New Mexico.....	101.1
Connecticut.....	127.8	New York.....	117.4
Delaware.....	118.1	North Carolina.....	93.9
Dist. of Columbia.....	111.2	North Dakota.....	103.5
Florida.....	98.0	Ohio.....	106.4
Georgia.....	96.2	Oklahoma.....	91.2
Idaho.....	102.5	Oregon.....	104.3
Illinois.....	109.5	Pennsylvania.....	101.2
Indiana.....	102.4	Rhode Island.....	110.1
Iowa.....	101.6	South Carolina.....	94.0
Kansas.....	99.7	South Dakota.....	99.7
Kentucky.....	100.6	Tennessee.....	93.2
Louisiana.....	95.8	Texas.....	93.0
Maine.....	97.6	Utah.....	105.1
Maryland.....	120.4	Vermont.....	107.6
Massachusetts.....	114.5	Virginia.....	99.7
Michigan.....	107.1	West Virginia.....	90.6
Minnesota.....	107.2	Washington.....	108.6
Mississippi.....	91.1	Wisconsin.....	106.0
Missouri.....	102.6	Wyoming.....	104.4
Montana.....	102.8		

The standard error is 3.7.

^aAlaska and Hawaii are excluded throughout the analysis because of unique factors. Including them would increase not decrease the interstate variation.

APPENDIX E

PUBLIC ELEMENTARY/SECONDARY SCHOOL ENROLLMENT, BY GRADE LEVEL AND STATE: FALL 1970 AND FALL 1982

Table 1.2

State	(Numbers in Thousands)								
	Total Enrollment			Preprimary to 8th Grade Enrollment			9th to 12th Grade Enrollment		
	Fall 1970	Fall 1982	Percent Change	Fall 1970	Fall 1982	Percent Change	Fall 1970	Fall 1982	Percent Change
United States	45,909	39,643	-13.6	32,577	27,143	-16.7	13,332	12,501	-6.2
Alabama	805	724	-10.1	570	510	-10.5	235	214	-8.9
Alaska	80	89	11.3	61	63	3.3	19	26	36.8
Arizona	440	510	15.9	314	359	14.3	126	151	19.8
Arkansas	463	433	-6.5	330	304	-7.9	133	129	-3.8
California	4,633	4,065	-12.3	3,231	2,802	-13.3	1,402	1,264	-9.8
Colorado	550	545	-0.9	391	380	-2.8	159	166	4.4
Connecticut	682	486	-28.6	487	336	-31.0	175	150	-14.3
Delaware	133	93	-30.1	94	60	-36.2	39	33	-15.4
District of Columbia	146	91	-37.7	113	65	-42.5	33	26	-21.2
Florida	1,428	1,485	4.0	1,016	1,039	2.3	412	446	8.3
Georgia	1,099	1,054	-4.1	800	739	-7.6	299	315	5.4
Hawaii	181	162	-10.5	129	110	-14.7	52	52	0
Idaho	182	203	11.5	124	145	16.9	58	58	0
Illinois	2,357	1,880	-20.2	1,698	1,287	-23.8	669	593	-11.4
Indiana	1,231	1,000	-18.8	876	664	-24.2	355	336	-5.4
Iowa	680	506	-25.5	485	338	-30.3	195	167	-14.4
Kansas	512	407	-20.5	357	283	-20.7	155	124	-20.0
Kentucky	717	651	-9.2	513	458	-10.7	204	194	-4.9
Louisiana	842	776	-7.8	615	556	-9.6	227	220	-3.1
Maine	245	212	-13.5	177	147	-16.9	68	65	-4.4
Maryland	916	689	-23.7	664	462	-30.4	252	227	-10.0
Massachusetts	1,168	909	-22.2	833	597	-28.3	335	312	-6.9
Michigan	2,181	1,761	-19.3	1,605	1,157	-27.9	576	605	5.0
Minnesota	921	715	-22.4	631	472	-25.2	290	241	-16.9
Mississippi	534	468	-12.4	388	327	-15.7	146	141	-3.4
Missouri	1,039	803	-22.7	748	547	-26.9	291	256	-12.0
Montana	127	152	19.7	121	107	-11.6	66	45	-31.8
Nebraska	329	269	-18.2	230	186	-19.1	99	83	-16.2
Nevada	128	151	18.0	93	97	4.3	35	54	54.3
New Hampshire	159	160	0.6	114	107	-6.1	45	53	17.8
New Jersey	1,482	1,173	-20.9	1,063	777	-26.9	419	396	-5.5
New Mexico	281	269	-4.3	199	190	-4.5	82	79	-3.7
New York	3,477	2,719	-21.8	2,448	1,761	-28.1	1,029	957	-7.0
North Carolina	1,192	1,037	-13.0	836	769	-8.0	356	328	-7.9
North Dakota	147	117	-20.4	100	81	-19.0	47	36	-23.4
Ohio	2,426	1,860	-23.3	1,698	1,259	-25.9	728	602	-17.3
Oklahoma	627	594	-5.3	437	423	-3.2	190	171	-10.0
Oregon	480	448	-6.7	325	309	-4.9	155	139	-10.3
Pennsylvania	2,364	1,784	-24.5	1,635	1,157	-29.2	728	627	-13.9
Rhode Island	188	139	-26.1	135	89	-34.1	53	50	-5.7
South Carolina	638	609	-4.5	459	424	-7.6	179	184	2.8
South Dakota	166	124	-25.3	114	86	-24.6	52	38	-26.9
Tennessee	900	828	-8.0	649	591	-8.9	251	237	-5.6
Texas	2,840	2,986	5.1	2,046	2,150	5.1	794	836	5.3
Utah	304	370	21.7	213	275	29.1	91	95	4.4
Vermont	103	91	-11.7	74	64	-13.5	29	27	-6.9
Virginia	1,079	976	-9.5	776	683	-12.0	303	293	-3.3
Washington	918	739	-19.5	573	508	-11.3	245	232	-5.3
West Virginia	400	375	-6.3	281	267	-5.0	119	108	-9.2
Wisconsin	994	785	-21.0	679	504	-25.8	315	281	-10.8
Wyoming	87	107	23.0	60	74	23.3	27	27	0

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Schools, Fall 1970, 1971, and unpublished revisions, and Common Core of Data, Part IV—Enrollment, Fall 1982, unpublished tabulations (November 1983)*.